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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,720	07/11/2001	Masaki Tsuruki	500.39863X00	6120

7590 12/10/2003

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EXAMINER

WILSON, GREGORY A

ART UNIT	PAPER NUMBER
	3749

DATE MAILED: 12/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/787,720	TSURUKI ET AL.
Examiner	Art Unit	
Gregory A. Wilson	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## ***Office Action Summary***

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 10 November 2003.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) 3-8 is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1,2 and 9-11 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

13)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a)  The translation of the foreign language provisional application has been received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) -

4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## DETAILED ACTION

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

The disclosure is objected to because of the following informalities:

On page 7, line 21, change "inner tube 2" to --outer tube 2--,

On page 8, line 4, change "bottom panel 62" to --bottom panel 52--,

On page 8, line 20, change "removablly" to --removably--,

On page 10, line 3, delete "the",

On page 11, line 15, change "in" to --is--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by **Granneman et al (6,613,685)**. **Granneman et al** discloses a furnace (pressure vessel 2) where a wafer is heated by a heating coil (8), a reaction pipe (6) located in the vessel (2), a means (12, 14) for feeding reaction gas into the reaction pipe, a means (11) for holding a wafer in the reaction pipe, wherein the wafer has a main principal plane and is heated in a condition in which the wafer is supported (floated) by heated gas streams.

**Claims 1 and 2** are rejected under 35 U.S.C. 102(b) as being anticipated by **Watanabe (5,458,688)**. **Watanabe** discloses a vertical furnace (SEE Figure 8) and includes a reaction tube with a double structure (101, 101a) located in the furnace, a means (151) for feeding reaction gas into the reaction pipe, a means (102) for holding a wafer in the reaction pipe, wherein the wafer has a main principal plane and is heated in a condition in which the wafer is capable of floating (implied at column 7, lines 10-16).

**Claim 1** is rejected under 35 U.S.C. 102(b) as being anticipated by **Amada (4,593,168)**. **Amada** discloses a heat treating furnace (1) and includes a reaction pipe (3) located in the furnace, a means (7a) for feeding reaction gas into the reaction pipe, a means (1a, 1b) of holding a wafer in the reaction pipe, wherein the wafer has a main principal plane and is heated in a condition in which the wafer is floated and uniformly heated within the reaction pipe.

**Claims 9 & 10** are rejected under 35 U.S.C. 102(b) as being anticipated by **Niino et al (5,316,472)**. **Niino et al** discloses a vertical furnace (1) and includes a reaction pipe (11) in the furnace, a means (37) for feeding reaction gas into the reaction pipe, a means (17) for holding wafers including a plurality of support columns (54, 54a) vertically arranged, support members (56) arranged at predetermined intervals in a vertical direction along the support columns for supporting the wafers, grooves (SEE Figure 7) are formed in a surface of each support member and the support members are positioned at 45 degree angles with respect to a direction of insertion of the wafer at the center of the support members (SEE Figure 6) and there are no support members present in an area in a range from -45 to +45 degrees with respect to the direction of insertion.

**Claim 9** is rejected under 35 U.S.C. 102(b) as being anticipated by **Porter et al (5,679,168)**. **Porter et al** discloses a vertical furnace (2) and includes a reaction pipe (12 & 14) located in a heating furnace, a means (24) for feeding reaction gas into the

reaction pipe, a means (26) for holding wafers in the reaction pipe, wherein the means for holding wafers further comprises a plurality of support columns (86) vertically arranged and support members (67) attached to the columns such that the support positions make a 45 degree angle with respect to a direction of insertion of the wafer at the center of the support members thereby spacing the wafers.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Niino et al (5,316,472)** in view of **Ishizuka et al (5,507,873)**. **Niino et al** discloses the applicants' primary inventive concept as stated above, but does not particularly teach a support member of arcuate or ring-shape. **Ishizuka et al** teaches a vertical wafer boat having arcuate support members. It would have been an obvious matter of design choice to modify support members of **Niino et al** by having the arcuate shape as taught by **Ishizuka et al**, since the applicant has not disclosed that having an arcuate or ring-shaped support member solves any stated problem or is for any particular purpose and it appears that the support members of **Niino et al** would perform equally well with support members of a variety of shapes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory A. Wilson whose telephone number is (703) 308-1239. The examiner can normally be reached on 7 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on (703)308-1935. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7764.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

GREGORY WILSON  
PRIMARY EXAMINER

*Gregory A. Wilson*

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December 5, 2003